



for VET - Teachers' collaboration for Improving the Quality of Vocational Education and Training 2020-2023

# IO1-A2 FINAL REPORT ANALYZING LS EXPERIENCES FOCUSING ON VET

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# 1. INTRODUCTION

The ERASMUS+ project LS4VET (Teachers' Collaboration for Improving the Quality of Vocational Education and Training) aims to adapt Lesson Study (LS) methodology for the sector of vocational education and training (VET) to achieve sustainable impact in VET schools that will apply the method. It is co-ordinated by ELTE (Faculty of Education and Psychology, Institute of Intercultural Psychology and Education, Hungary) and implemented in collaboration with the following project partners: iTStudy Hungary Educational and Research Centre Ltd., Neumann János Computer Science Technical School, Pädagogische Hochschule Niederösterreich and HTL Wiener Neustadt, Università ta' Malta, Institute of Tourism Studies (Malta), University of Applied Sciences Utrecht, and Stichting Landstede (Netherlands).

As the part of the intellectual outcome 1 of the project, this report aims at preparing an analysis summarizing the characteristics and experiences of prior and current applications of the method of LS in VET in general as well as in the participating countries and by the partners, in particular. This study builds on a systematic analysis of relevant academic publications regarding the application of the method of LS in VET and two surveys on the experiences of the application of VET in the four participating countries and by the partner organisations using a partner organisation questionnaire and a country fiche questionnaire.

# 1.1 ADAPTATION AND VERSIONS OF LS IN THE NEXT FIELDS OR ASPECTS

LS is a model of teacher professional development which originated in Japan over 100 years ago. The components of the Japanese LS model, which became well known all over the world after 1999, are

- 1. research and preparation: goal setting and lesson planning in small group collaboration,
- 2. implementation of a research lesson
- 3. observations of the lesson by peers and other experts
- 4. reflection and improvement: analytic discussions of observations made, student data collected, and reflections of the lesson
- 5. revising the research lesson, a repeated research lesson, and repetition of the discussion, and
- 6. reflection and filling of records: revisions to improve the lesson and goal setting for the next cycle (Stigler & Hiebert, 1999).

In its global spread beyond Japan, some new LS models were developed by different countries in addition to the original Japanese model. For example, the UK adapts its own UK LS model (Dudley, 2014), based on the Japanese LS principles and the USA developed a microteaching LS model (Zhang & Liu, 2018).

The Japanese model of LS is predominantly used in general education. However, in its international spread, it has increasingly been used not only in other countries with different education systems and social-cultural conditions, but also in different sectors of education, including higher education and teacher education (e.g. Larssen et al., 2018; Wood et al., 2020, Mewald & Rauscher, 2019). In different countries, LS is implemented using different approaches: for example, as a teacher training model, integrated with microteaching for critical analysis during teaching and learning process in the teaching practicum of pre-service teacher education as well as a continuing professional development practice for teachers' collaboration, professional learning activity and school-based teacher professional development for in-service teachers.

Moreover, with the rapid development of Information and communications technology (ICT), online LS has been initiated. However, LS itself is a classroom practice and online implementation has many challenges, especially close collaboration and observation (Goei et al., 2021).

Some contexts adopt original Japanese LS while others practise hybrid versions of LS. These hybrid LS versions are, for example, Chinese LS or Learning Study developed by Marton and Lo (Cheng & Lo, 2013).

Chinese LS is the centralized training approach. In contrast to Japanese LS, teacher teams of Chinese LS follow the hierarchical structure. In Chinese LS teams, the experienced and expert teachers are responsible for developing public lessons. The novice teachers learn through observing experienced or expert teachers' teaching a model lesson plan and discussing about it with their peers (Chen & Zhang, 2020).

Learning study is one major innovative hybrid of LS and variation learning theory. It views teaching and learning from the perspective of educational science. It may be challenging to apply it for teaching staffs in different fields who do not know much about pedagogies and didactics.

Skott & Møller (2019) describe adaptation approaches of LS: The first approach tries to adopt the authentic form of LS directly into different contexts. The second approach highlights the important culture-independent conditions for successful adaptation of LS. The third approach focuses on cultural conditions that affect successful adaptation of LS, considering the cultural differences between LS-originated country and adapting country. The last approach emphasizes on the conflicts and power relations in teachers' work for adaptation of LS.

According to Fang & Wang (2020), adaptation to meet demands in national contexts, issues of transfer in adapting Japanese mathematics problem-solving teaching, and national models of LS implementation are the factors of adaptation and diffusion of LS in different contexts.

# 2. A LITERATURE REVIEW ON LESSON STUDY IN VET

This literature review aims to review the existent literature on how LS has been adapted and implemented with the goal to find out how LS could be adapted and implemented in VET education. The literature search was started by browsing the search term ("Lesson Study") AND ("Vocational Education and Training") OR ("Vocational Schools") on the databases where nine studies were collected for analysis, with a geographical focus on Europe and Asia. Moreover, one Erasmus+ project regarding the LS application in VET was reviewed. We could extract information on:

- 1. general Information of selected articles,
- 2. impacts of LS in VET, and
- 3. approaches of LS implemented in the VET context.

# 2.1 GENERAL INFORMATION IN ARTICLES

According to current LS literature, the application of LS in VET education started in the 2000s. This review suggests that there seems to be a limited spread of LS in VET: Reserachers from only three countries have published LS application in VET until now.

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Nine international studies were collected. The majority of the studies were conducted in the Asian context, more precisely in Indonesia. Only two studies carried out in the European context were found. Table 1 demonstrates the distribution of the studies along their geographical focus and year of publication.

		Year o	f public	ation	-					-
		2013	2014	2015	2016	2017	2018	2019	2020	Total
	Indonesia (Asia)	1	0	1	0	1	0	4	0	7
The geographical	Sweden (Europe)	0	0	0	0	0	0	0	1	1
focus of the study	The Netherlands (Europe)	0	0	1	0	0	0	0	0	1
	Total	1	0	2	0	1	0	4	1	9

# Table 1 Distribution of the studies in terms of their geographical focus and year of publication, count

Five studies were conducted at the school level and two occurred at the regional level. One LS integrated technology, another one applied the hybrid version of LS and Learning Study.

The majority of the studies (5) is based on a qualitative methodological approach, two studies follow a mixed-methods approach, one is quantitative and another one is not empirical. The subject areas of the studies focus on Dutch language, Mathematics, Accounting, Engineering, Electrical installation, Science and welding, and Handicraft job training.

# Table 2 Summary of the studies

Studies	Research Design	Impact of LS/ Focus	School level	Subject
Subadi, Khotimah & Sutarni (2013)	Class research action based- lesson study model	Teacher professional development	Vocational high school	
Halem, Goei & Akkerman (2016)	Case study	Formative assessment in teacher talk	Upper preparatory vocational education	Dutch language teachers and mathematics teachers
Suyatmini, Sarjono, Asmawati & Rohmah (2019)	Descriptive, evaluative, and experimental methods	The development of accounting learning management on curriculum 2013 based on Lesson Study	3 public vocational schools and 3 private vocational schools	Accounting
Kuntadi, Widity, Yulia & Mubaroq (2019)	Not empirical	E-observation (android-based application)	Vocational high schools	Not mentioned
Rahmawati, Nurhidayati, Saputro (2019)	A multiphase mixed- methods design	Higher Order Thinking Skills (Hots)	Pre-Service vocational engineering teachers	Engineering
Zahro, Sutadji & Kiranawati (2015)	Descriptive with a qualitative approach	the Model of Lesson Study-Based Handicraft Job Training	Employees in ECO Green Park	Handicraft job training
Hudallah (2019)	Two LS cycles intervention	Practical skills	Vocational students	Electrical installation
Firdaus, Surato & Fikri (2019)	quasi experimental (Lesson Study- based learning process skill)	Discussion pattern	Vocational students	Science
Asplund & Kilbrink (2020)	Learning Study intervention	Theories in practice (teacher professional learning)	Vocational teachers (upper secondary school)	Welding

## 2.2 FOCUS ON LS IN VET

The impact of LS described in the studies generally influences vocational teacher professional development, vocational students' learning outcomes, and technology integration (E-observation, Android-based application). One study applied LS as a teacher professional development tool for improving vocational high school teachers' professionalism while another study focuses on formative assessment in teacher talk during LS. One study practices LS to improve the higher order thinking skills of pre-service vocational engineering teachers. In one of the studies, vocational teachers use LS to improve students' learning process skills in Science education. Another study uses Learning Study with a focus on welding. One of the studies develops accounting learning management on Curriculum 2013 (Suyatmini, Sarjono, Asmawati & Rohmah, 2019) based on LS at vocational school. The participants of this study are not only vocational teachers and students but also principals, education experts and policymakers. One of the studies develops innovatively E-observation (Android-based application) to facilitate vocational teachers' observation skill during LS cycles.

# 2.3 APPROACHES OF LS IMPLEMENTED IN THE VET CONTEXT

Most of the studies applied LS and only one used Learning Study. One of the studies modified LS as a class research action based-lesson study model (Subadi, Khotimah & Sutarni, 2013) and applied this model in two schools, general high school and vocational school. The study validated the effectiveness of the model from different participants' perspectives (principals, course teachers, students). The study conducted by Halem, Goei & Akkerman (2016) implemented LS with two LS teams including not only teachers but also external facilitators. In one study, LS was used to implement the curriculum of the accounting programme (Suyatmini, Sarjono, Asmawati & Rohmah, 2019). The study of Kuntadi, Widity, Yulia & Mubaroq (2019) included technology integration and developed an Android-based application and E-observation used in LS. Rahmawati, Nurhidayati, Saputro (2019)implemented a LS cycle with particular steps, formation of teams, developing learning goals, designing the lesson, planning the research lesson, teaching and observing, analyzing revising, repeating or examining and documenting and disseminating. In two of the studies (Firdaus, Surato & Fikri, 2019; Asplund & Kilbrink, 2020) ), LS and Learning Study interventions were conducted in experimental research designs.

# 2.4 LS IN ERASMUS+ PROJECTS

The EntreComp for Teachers project is the only LS project that applied for ERASMUS+ funding in the context of VET education in the past.

https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2019-1-NO01-KA201-060140

The aim of this project is to build tools, instruments, and teaching contents to develop the following skills: entrepreneurship, creativity, innovation, resilience, passion, and determination. It also aims to create a shared vision of entrepreneurship, based on common values. The project develops a Moodle course and analyzes the quality of the course activities, and the teaching styles in different countries, using LS methodology. Four reports about the analysis and observation of the research lessons in the Moodle course have so far been created on the basis of LS methodology. Between 30 and 50 teachers and about 100 students are involved in the project activities. The project is ongoing project and results are not yet available.

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To conclude, the history of LS implementation in VET education is less than 10 years. The extent of the global spread of LS in VET education is very narrow, and LS has not been systematically adapted for VET education so far. There does not seem to be a country which implements LS in VET education at national level. The literatrure review does not provide any reports on impacts or approaches of LS in VET.

In some cases, VET schools were venues of conducting LSs but the published studies included hardly any discussion of issues related to the special context of VET. There might be two explanations for this: (1) LS has indeed been used much less frequently in VET than in general education; (2) even where it has been applied in VET, no attention was paid to the special requirements of VET and thus LS has not yet been specifically adapted for this sector.

# 3. LS EXPERIENCES OF THE PARTNER ORGANIZATIONS

This section presents the summary of the partners' LS experience, developed on the basis of an online partner survey (see Appendix) carried out in Austria, Malta, Hungary, and in the Netherlands in early December 2020. The context of this survey was research on LS in the four countries to provide initial information for the Intellectual Outcome IO 1 - A2: the analysis of VET experience of partners in the ERASMUS+ project LS4VET.

The participants in the partner questionnaire were the project managers in each country and their teams. They were asked to help find out about what LS models they were using and what LS was like in their countries.

The partner questionnaire comprised 20 questions which took the respondents about 30 minutes to answer them. The response required completion in one go.

# 3.1 RESULTS FROM THE PARTNER QUESTIONNAIRE IN AUSTRIA

In total, two respondents who filled in the 20 questions were from Austria. They suggested that their information about LS in their country was comprehensive and most probably complete or good but not complete, while their information about LS in VET education was limited and most probably incomplete. The respondents are accupied as university lecturers, trainers in teacher professional development, and one is also a researcher. Both respondesnts are project partners.

# 3.1.1 THE EDUCATIONAL SYSTEM IN AUSTRIA

In Austria, pupils have to complete at least nine years of school education: four years in elementary school (Volksschule), four years in a school for lower secondary education (Mittelschule) or academic secondary school (Gymnasium), followed by an upper secondary school or a polytechnic institute (Polytechnische Schule) for a year, if they want to take an apprentice position. Apprenticeship includes the obligation to attend vocational school (Berufsschule) for three years. This can be done either in blocks of 5 days a week for about four months or once a week in the same stretch of time as a normal school. At the end of those three years apprentices take the final apprenticeship examination (Lehrabschlussprüfung). Pupils who complete four to five years at an institution of higher education (Höhere Schule) or a vocational school with higher education entrance qualification (Berufsbildende Höhere Schule) conclude with a standardised school leaving exam, formerly called "Matura". This exam qualifies students to apply for tertiary education.

	most common age at	
	beginning	end
primary general education (ISCED 1)	6	10
lower secondary general education (ISCED 2)	10	14
upper secondary general education (ISCED 3)	14	19+
VET schools (lower/upper/post-secondary not tertiary education, ISCED 2- 4)	14	19+

higher (vocational) educational institutes (ISCED 5, EQF level 5)	14	19+
tertiary institutions (EQF level 6)	18	

# 3.1.2 LS EXPERIENCE IN AUSTRIA

The University College of Teacher Education in Lower Austria has implemented LS since 2010. LS has been integral part of pedagogical practical studies in their pre-service BA and MA degree programmes for primary school teacher education, in their continuous professional development (CPD) MA programmes for all school types as well as in in-service programmes. The model used is similar to the UK LS model (Dudley, 2014) or the model described by Lewis and Hurd (2011). The most probable difference is the inclusion of knowledgeable others (Takahashi, 2014) from the very beginning of the LS and throughout the whole process. The Lower Austrian Model was published in 2019 (Mewald & Rauscher, 2019) and the role of the knowledgeable other, called "Wissenspartner" in German, was researched between 2014 and 2019 (Mewald, 2020). Both models, for LS and for "Wissenspartner", have been published on the institutional website (see https://www.phnoe.ac.at/de/lessonstudy.html).

Following this model, the Lower Austrian LSs include the following components:

Pre-study research, planning meetings, research lesson plans, observation plans, post-lesson interviews/surveys, case students, reflection meetings, knowledgeable others/LS facilitator support, and LS reports/dissemination.

Planning LS research lessons (RL) require ample time for initial planning, especially if pre-study research time is included in this process. The class teacher provides input about the learning needs of the whole group, the LS team collaborates on researching the theoretical basis for the lesson and the team agrees on the learning goals. Developing the goals for the class and the thtree to four case study pupils is done collaboratively. This process usually takes at least 4 hours per person; planning the research lesson in a backward design (Wiggins & McTighe, 2005) and including the expected learning outcomes and/or observable performance of most learners and the three to four case pupils in particular usually takes another four hours. If the time for developing observation plans and interview schedules is included, another 2 hours have to be added. So in total a LS team collaborates approximately 10 hours prior to the first implementation of a LS research lesson. The following cycle(s) are usually less time intensive, unless new theoretical research is required because of the findings in the observations, interviews, or post-lesson reflections. A typical LS includes 2-4 cycles in Lower Austria.

Depending on the age group, the participants are actively involved in all parts of the LS. Very young learners primarily participate as learners through giving feedback about their learning during and after the RL. If students' or in-service teachers' learning is the focus of the LS, they usually participate in all parts of the LS.

Although the Lower Austrian partner has ample experience in LS, the team has never engaged in LS in vocational education. It can be assumed that LS in VET education will be similar to LS in other school types, especially in the so-called academic subjects. Considering the special situation of vocational schools applying the dual system, however, it is assumed that their requirements will be significantly different.

# 3.2 RESULTS FROM THE PARTNER QUESTIONNAIRE IN HUNGARY

In total, 30 respondents who filled in the 20 questions were from Hungary.

One respondent suggested that their information about LS in their country was comprehensive and most probably complete, while 4 ticked "good but not complete". 22 respondents said their information about LS in their country was limited and most probably incomplete, three ticked "other".

The respondents are "teachers" (27), a "university lecturer", a "masters degree student", and "researchers" (2); three respondents said they are "project partners".

# 3.2.1 THE EDUCATIONAL SYSTEM IN HUNGARY

In Hungary education is compulsory between 6 and 16 years of age. Primary education lasts for 4 years (6-10), lower secondary for 4 years (10-14) and upper secondary is also 4 years long (14-18). The academic track in upper secondary is gymnasium. Vocational education lasts for 4 years, but it is in transition in Hungary nowadays. In the new system technicum lasts for 5 years, and vocational schools offer 3 years education for their students. Approximately 38% of all upper secondary students enrol in VET programmes in Hungary (this is somewhat lower proportion than the OECD average of 42%).

	most common age at	
	beginning	end
primary general education (ISCED 1)	6	10
lower secondary general education (ISCED 2)	10	14
upper secondary general education (ISCED 3)	14	18+
VET schools (lower/upper/post-secondary not tertiary education, ISCED 2- 4)	14	17/19+
higher (vocational) educational institutes (ISCED 5, EQF level 5)	18	20+
tertiary institutions (EQF level 6)	18+	

# 3.2.2 LS EXPERIENCE IN HUNGARY

Four respondents said that they had implemented LS at their institution; 26 have not seen any LS at their institution(s). Six Hungarian respondents reported about LS in in-service teacher training programmes and five people said LS had been implemented in projects. 17 respondents clicked "other".

According to the respondents, the Hungarian LSs include pre-study research (selected by 4 respondents), planning meetings (4), research lesson plans (6), observation plans (3), post-lesson interviews (3), case students (2), reflection meetings (4), knowledgeable other/LS facilitator support (3), and LS reports (2).

In Hungary, LS teams planned their research lessons for about 1 unit according to six respondents. One person said that planning research lessons had taken up to 4 units while 3 other respondents said more than 4 units were needed to plan their LSs. 20 respondents clicked "other".

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The Hungarian LSs took 1 cycle according to 5 respondents, one person clicked up to 3 cycles and two said that their LSs had taken more than 4 cycles. 20 respondents clicked "other".

Hungarian students participated in these LSs in the following ways: Four respondents said they were part of "planning the LS", three said that students had given feedback after the research lesson and two said that "being a student but not actively involved in the LS" and "giving feedback during the lesson" were the ways students had participated. One person responded that students had also participated in reflection meetings.

# 3.3 RESULTS FROM THE PARTNER QUESTIONNAIRE IN MALTA

In total, 1 respondent filled in the 20 questions for the Maltese partners. This person suggested that their information about LS in their country was comprehensive and most probably complete; in the sector of VET education it was good but not complete. The respondent is a university lecturer, a trainer in teacher professional development, a PhD student, a researcher, and a project partner.

# 3.3.1 THE EDUCATIONAL SYSTEM IN MALTA

Education in Malta is compulsory through age sixteen and is offered through three different providers: the state, the church, and the private sector.

Malta's educational system is divided into three stages: primary (ages 5–11), secondary (ages 11–16) and tertiary. In their last years of primary education, students are placed on tracks based on educational attainment, and at the age of eleven, students sit an eleven plus examination. Success in the eleven plus exam places a student in a junior lyceum while mediocre performance or not sitting the examination places a student in a less competitive secondary school. Secondary Education Certificate (NEC) examinations are taken at age 16, and matriculation examinations are taken at age 18 to determine university entrance eligibility.

	most common age a	
	beginning	end
primary general education (ISCED 1)	5	11
lower secondary general education (ISCED 2)	11	13
upper secondary general education (ISCED 3)		
VET schools (lower/upper/post-secondary not tertiary education, ISCED 2- 4)	16	18
higher (vocational) educational institutes (ISCED 5, EQF level 5)	18	20+
tertiary institutions (EQF level 6)	18	20+

# 3.3.2 LS EXPERIENCE IN MALTA

The Maltese partner has carried out LS in teacher in-service training.

Maltese LSs take up to four cycles with more than 4 units to plan a research lesson. They include the following components: pre-study research, planning meetings, research lesson plans, observation plans, case students, reflection meetings, knowledgeable others/LS facilitator support, and LS reports/dissemination.

The students are actively involved in all parts of the LS, i.e. through being a student, giving feedback about learning during the research lesson, or giving feedback about learning after the research lesson.

Moreover, the following information to understand the specificity of LS in VET in Malta is important:

Some teachers have initial teacher education but not in VET subjects.

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Some teachers have industry experience but lack teacher training.

For each VET subject, there are usually one to two teachers in a school.

Data for this survey was collected from the documentation on the CLeStuM website (see www.clestum.eu) and from contacts with teachers and schools. The CLeStuM team started by analysing all LSs uploaded on the website and were involved in all of these LSs either as leaders, knowledgeable others and/or observers during the teaching of lessons. Following that, the team engaged in a self study to identify key characteristics that could help in outlining how LS has been carried out over the past 3 years (since 2017) in Malta.

# 3.4 RESULTS FROM THE PARTNER QUESTIONNAIRE IN THE NETHERLANDS

In total, 2 respondents filled in the 20 questions for the Dutch partner. In the Netherlands, LS is not a teacher professionalization method which is adopted by VET schools yet. LS is also not a research field for the VET school.

One respondent suggested that their information about LS in their country was comprehensive and most probably complete, the other said it was limited and most probably incomplete. In the sector of VET education, one person selected "good but not complete". The respondents are teachers, one is also a project partner.

# 3.4.1 THE EDUCATIONAL SYSTEM IN THE NETHERLANDS

Educational policy is coordinated by the Dutch Ministry of Education, Culture and Science with municipal governments.

Compulsory education starts at the age of five, although in practice, most schools accept children from the age of four. From the age of sixteen, there is a partial compulsory education, i.e. a pupil must attend some form of education for at least two days a week. Compulsory education ends for pupils aged eighteen and up or when they get a diploma on the VWO, HAVO or MBO level.

	most comm	on age at
	beginning	end
primary general education (ISCED 1)	4	12
lower secondary general education (ISCED 2)	12	15
upper secondary general education (ISCED 3)	15	18
VET schools (lower/upper/post-secondary not tertiary education, ISCED 2- 4)	16	20+
higher (vocational) educational institutes (ISCED 5, EQF level 5)	18	20+
tertiary institutions (EQF level 6)	18	20+

#### 3.4.2 LS EXPERIENCES IN THE NETHERLANDS

One of the two respondents has carried out LS in their institution in the context of a project, the other respondent has not. These LSs comprised one cycle with 1 unit to plan the research lesson. They included the following components: pre-study research, planning meetings, research lesson plans, observation plans, case students, reflection meetings, post-lesson interviews, knowledgeable others/LS facilitator support, and LS reports/dissemination.

The students were actively involved as learners but not directly involved in the LS.

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# 3.5 RESULTS FROM THE COUNTRY FICHE QUESTIONNAIRE - LS EXPERIENCES IN THE PARTNER COUNTRIES

This section discusses LS experiences in the partner countries, based on the feedback of respondents to a country fiche questionnaire implemented online in Austria, Malta, Hungary, and in the Netherlands in early December 2020 (see Appendix). The context of this survey was research on LS in the four countries to provide initial information for the Intellectual Outcome IO 1 - A2: the analysis of VET experience of partner countries in the ERASMUS+ project. In total, 35 respondents answered the country fiche questionnaire.

# 3.5.1 OFFICIAL APPROACHES AND NATIONAL MODELS TO LESSON STUDY

In Austria, there are official approaches to implement LS at the University College of Teacher Education in Carinthia (www.ph-kaernten.ac.at) and at the University College of Teacher Education in Lower Austria (https://www.ph-noe.ac.at/de/lessonstudy.html). Moreover, there is a project implementing LS in continuous professional development in Lower Austria (see https://www.ph-noe.ac.at/de/fortbildung/spezifische-bereiche/lernen-mit-wissenspartnern und-lesson-study.html).

Apart from the groups in two federal states, there is no unified national group.

The Lower Austrian Group has published their model on their LS website and in a published handbook (Mewald & Rauscher, 2019). Their model is similar to the model published by Dudley (2019) and the Lesson Study UK group. According to the LS group in Lower Austria, the reason for adapting the UK model is the emphasis of learner participation and the clear focus on learning through concentrating on case study pupils and their active participation in the LS in alignment with their age.

In Hungary, a model for LS is in development based on an official approach and within the framework of an institutional group.

In Malta, a model for LS is currently in development. It is based on an official approach and within the framework of an institutional group.

In the Netherlands, there is a national approach to carry out LS published by the National Consortium LSNL (https://lessonstudynl.online/). This body suggests a model for LS which is also published on their website.

# 3.5.2 LESSON STUDY COMPONENTS

In Austria and the Netherlands, LSs encompass pre-study research, collaborative planning, plans for research lessons, observation plans, post-lesson interviews/surveys, case students, reflection meetings/post lesson debriefings, knowledgeable others/LS facilitators, and LS reports/dissemination in varying degrees. In Hungary, post-lesson interviews/surveys and case students are not included in LS. Maltese LS does not include public research lessons, while the other components are included in varying degrees.

## 3.5.3 DURATION OF LESSON STUDIES

On average, LS teams plan a research lesson within 2.4 hours, a LS cycle encompasses 1.8 cycles with an overall duration of the whole study lasting for 11 weeks.

## 3.5.4 HISTORY OF LS

On average LS has a history of less 10 years or more in Austria, Malta and the Netherlands. In Hungary, LS is considered to be in the beginning phase.

#### 3.5.5 LS IN VARIOUS SCHOOL TYPES

LS is implemented at all educational levels in Austria and in the Netherlands, although with varying degrees. In Hungary, LS is currently not implemented at upper secondary or tertiary level, and it is not used at tertiary level or at VET schools in Malta.

## 3.5.6 GOALS AND FOCUS AREAS IN LS

The main goals of teachers who participate in LS are to improve teaching and learning as well as continuous professional development (CPD) in collaborative groups in all participating countries. However, LS participants also focus on developing in content areas, research or qualification in addition to the most prominent goals.

# 3.5.7 THE PARTICIPATION OF LEARNERS

Feedback in the survey suggests varying degrees of learner participation in LS according to age. However, students seem to be most frequently actively involved as learners and in providing feedback about their learning during or after the research lesson. The target age group, i.e. potentially also VET learners, are actively involved in all parts of the LS in Austria and in the Netherlands.

#### 3.5.8 FUNDING AND INCENTIVES

According to our survey, schools may receive direct funding in the Netherlands, LS is part of CPD and thus funded in Austria. Incentives to participate in LS may be the acquisition of ECTS credit points in Austria and Malta. In the Netherlands, gaining status may also be motivation to participate in LS.

#### 3.5.9 THE ROLE OF PRINCIPALS AND DEPARTMENT HEADS IN LS

School leaders seem to play an organisational role in LS although they may also participate in Austria and Malta.

# 3.5.10 LS IN VET EDUCATION

Overall, LS is in a development phase in the partner countries, although there are some schools with experience in Austria, Malta and the Netherlands.

# 3.5.11 FREQUENCY AND DURATION OF LS IN VET EDUCATION

The overall frequency of LS in VET education is anticipaed to be 1.7 per year in the four partner countries. In Austria, a LS in VET education may last for 5 hours per cycle and 2-3 cycles may be implemented.

# 3.5.12 LS TEAMS IN VET EDUCATION

In VET education, teacher teams are mixed in all partner countries or constituted by one type of teacher in Hungary. The average number of teachers in a LS team may thus be 4.5.

# 3.5.13 RECENT DEVELOPMENTS

Recent developments include LS in VET education in all countries, Austria is also in the process of adding LS to VET curricula.

# 4. CONCLUSION

The LS4VET project aims to adapt the LS methodology for the sector of VET in order to achieve deep and sustainable impact on learning. That is, improvement of the quality of education in VET schools that will apply the method. According to the literature review, LS implementation in the VET sector has no typical LS model aligned with the specific features of VET. There is no study that can show the sustainable impacts of LS on the quality of teaching and learning in VET. According to the results of the survey, general LS experiences and LS implementation in VET are not on the same page in the partner countries or organisations. The LS approach of each country has diverse components, and the extent of the participation of teachers, external knowledgeable others, and learners varies. To develop a common model for LS4VET needs to consider the different experiences and characteristics of the different contexts.

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# 6. APPENDIX

# 6.1 PARTNER QUESTIONNAIRE

9.12.2020

LS4VET: Partner Questionnaire

# LS4VET: Partner Questionnaire

Dear colleagues, we would like to ask you to complete this partner questionnaire in the context of IO1-A2 until December 4th, 2020.

Thanks a lot for your contribution, the PH NÖ LS4VET team \* Required

#### Section 1: Demographic data

1. I am answering this questionnaire because I am informed about LS .... \*

Mark only one oval.

C	) in Austria
C	) in Hungary
C	) in Malta
C	) in the Netherlands

2. My information about LS in my country is ... \*

Mark only one oval.

- comprehensive and most probably complete
- good but not complete
- nearly complete
- limited and most probably incomplete
- Other + Please specify in the next question!
- 3. If you clicked "other", please tell us more!

https://docs.google.com/forms/d/1rq8SHToet6KMzd5kFuA0M\_jSMpW5UGnxij-h16pQ4kI/edit

0	17	20	20
ъ.	14	. ZU	20

LS4VET: Partner Questionnaire

4. lam...\*

Check all that apply.

- a teacher
- a principal
- an administrator
- an educational leader
- a university lecturer
- a trainer in teacher professional development
- a Master's degree student
- a PhD student
- a researcher
- a project partner
- Other + Please specify in the next question!
- 5. If you clicked "other", please tell us more!

#### LS4VET: Partner Questionnaire

 How are educational levels organised in your country? Please tick the beginning- and end age for this school type. \*

Check all that apply. 4 5 7 8 9 10 6 11 12 primary education (ISCED 1) lower secondary education (ISCED 2) upper secondary education (ISCED 3) vocational schools (ISCED 2-4) higher vocational education (ISCED 5, EQF level 5) tertiary institutions (EQF level 6) . •

7. Please add any important information in addition to the previous question:

Section 3: Questions for project partners

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٥.	1	2	2	n	2	n

LS4VET: Partner Questionnaire

8. Have you had any LS implemented at/with the involvement of your institution? \*

Mark only one oval.



9. For what reason do/did you carry out LS? You can choose multiple answers. \*

Check all that apply.

It is embedded in our pre-service teacher training programme.

It is embedded in our in-service teacher training programme.

It was/is implemented as part of a project.

Other: Please specify!

10. If you clicked "other" in the last question, please tell us more!

11. Which LS model do/did you use? \*

LS4VET: Partner Questionnaire

12. Which components did/do LS carried out at your institution encompass? You can choose multiple answers. \*

Check all that apply.

- Pre-study research
- Planning meeting
- Research lesson plans
- Observation plans
- Post-lesson interviews/surveys
- Case students
- Reflection meeting
- KnowledgeableOthers>
- LS facilitator support
- LS reports/dissemination
- Other: Please specify!
- 13. If you clicked "other" in the last question, please tell us more!

14. For how many units/hours did/do your LS teams usually plan research lessons? Please choose only one answer. \* Mark only one oval. ) 1 unit (40-60 minutes) ) up to 4 units (up to 240 minutes) ) more than 4 units (more than 240 minutes) Other: Please specify!

https://docs.google.com/forms/d/1rq8SHToet8KMzd5kFuA0M\_jSMpW5UGnxij-h18pQ4kl/edit

LS4VET: Partner Questionnaire
If you clicked "other" in the last question, please tell us more!
9
How many cycles did/do your LS involve? Please choose only one answer. *
Mark only one oval.
1 cycle
up to 3 cycles
<ul> <li>4 or more cycles</li> <li>Other: Please specify!</li> </ul>
Utiler. Please specify:
If you clicked "other" in the last question, please tell us more!
3
How did students participate in your LS? You can choose multiple answers. $^{\star}$
How did students participate in your LS? You can choose multiple answers. * Check all that apply.
Check all that apply.
Check all that apply.          Planning the LS         Being a student but not actively involved in the LS         Giving feedback about learning during the research lesson
Check all that apply.          Planning the LS         Being a student but not actively involved in the LS         Giving feedback about learning during the research lesson         Giving feedback about learning after the research lesson
Check all that apply.          Planning the LS         Being a student but not actively involved in the LS         Giving feedback about learning during the research lesson

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### 6.2 COUNTRY FICHE QUESTIONNAIRE

9.12.2020

LS4VET: Country fiche

# LS4VET: Country fiche

If you want to carry on in English, click on NEXT

Ein Rechtsklick auf den Bildschirm öffnet ein Fenster zur Übersetzung dieses Fragebogens. Sie können Ihre Sprache wählen!

Een rechter muisklik op het scherm opent een venster om deze vragenlijst te vertalen. U kunt uw taal kiezen!

A jobb egérgombbal a képernyőn megnyílik egy ablak a kérdőív fordításához. Kiválaszthatja a nyelvét!

\* Required

Dear colleagues,

We are conducting research on <LessonStudy> (LS) in your country in the context of the ERASMUS+ project LS4VET (Teachers' collaboration for Improving the Quality of Vocational Education and Training). This project, co-ordinated by ELTE (Faculty of Education and Psychology, Institute of Intercultural Psychology and Education, Hungary), aims to adapt LS methodology for the sector of vocational education to achieve sustainable impact in VET schools that will apply the method.

We'd love to hear from you about what LS models you use and what LS is like in various school types.

There are 2 sections and the survey should only take 30 minutes. Section 2 is about VET educatoin. Your response in this section will help us develop a LS model and course for VET educators.

Your responses are completely anonymous - this requires completion of the questionnaire in one go.

Questions marked with a red \* are required.

Thank you for your answers, we really appreciate your input!

The LS4VET ERASMUS+ Team - https://ls4vet.itstudy.hu/

If you have any questions about the survey, please email: claudia.mewald@ph-noe.ac.at

We apologize that the automated translation might create some odd formulations and it will lack female forms. It is not our intent to disregard gender issues!

Section 1: Questions about <lessonstudy> in general

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9.12.2020

LS4VET: Country fiche

1. I am answering this questionnaire because I am informed about LS .... \*

Mark only one oval.

🔵 in Austria

🔵 in Hungary

🔵 in Malta

in the Netherlands

2. My information about LS in my country is ...

Mark only one oval.

comprehensive and most probably complete

good but not complete

nearly complete

limited and most probably incomplete

Other + Please specify in the next question!

3. If you clicked "other", please tell us more!

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

LS4VET: Country fiche

4. I am...\*

Check all that apply.

- a teacher (we apologize that the automated translation will not add female forms)
- a principal
- an administrator
- an educational leader
- a university lecturer
- a trainer in teacher professional development
- a Master's degree student
- a PhD student
- a researcher
- a project partner
- Other + Please specify in the next question!
- 5. If you clicked "other", please tell us more!
- 6. Are there any national or regional models for LS in your country? \*

Mark only one oval.

O No

- ) Yes
- ) In development

I do not know

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

9.12.2020	LS4VET: Country fiche
7.	If you can, please provide links to working papers, webpages, publications etc. that will exemplify the LS model(s).
8.	Is there an official approach, such as facilitation or implementation procedures, to implement LS in your country? *
	Mark only one oval.
	Ves In development
9.	If you can, please give information about the LS approach(es) and/or activities in
	your country/region.

-	2	_	-	_	-	-
9.	1	2	.2	0	2	O

LS4VET: Country fiche

10. Are there any regional or institutional groups that promote LS in your country? \*

Mark only one oval.

No
Yes
In development
I do not know

11. If you can, please give information about groups, institutions and/or activities in your country. If possible, add websites and/or contacts.

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

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9.12.2020

#### LS4VET: Country fiche

## 12. Which components does LS typically encompass in your country? \*

Mark only one oval per row.

	always	often	sometimes	never	I do not know
Research prior to planning	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Collaborative planning	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Plans for research lessons	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Observation plans	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Post-lesson interviews/surveys	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Case students	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Reflection meetings/Post-lesson debriefings	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
<knowledgeableothers>/LS facilitators</knowledgeableothers>	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
LS reports/dissemination	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Public research lessons	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Other + Please specify in the next section	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

13. If you clicked "other" in the last question, please tell us more!

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi96tMoLdYM9mr1UIWrY/edit

0.1	22	020
0.1	2.2	020

LS4VET: Country fiche

14. For how long do LS teams usually plan research lessons in your country?\*

Mark only one oval.

C	) up to 1 hour
C	) up to 2 hours
C	) up to 3 hours
C	more than 3 hours
C	Other + Please specify!

- 15. If you clicked "other" in the last question, please tell us more!
- 16. How many cycles does LS typically encompass in your country? \*

Mark only one oval.

1
2
3
4
more than 4
Other + Please specify in the next question!

17. How long does each cycle last (approximately)? How much time is there between cycles (approximately)?

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9.12.2020

#### LS4VET: Country fiche

## 18. At which schools is LS implemented in your country? \*

Mark only one oval per row.

	regularly	sometimes	not yet - but planned	never	I do not know
primary schools	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
lower secondary schools	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
upper secondary schools	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
vocational schools	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
vocational colleges	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
higher vocational education (EQF level 5)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
tertiary institutions (EQF level 6)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

19. How many students participate in LS in the various schools approximately?

20. Since when has LS been carried out in your country? \*

Mark only one oval.

- more than 10 years
- since about 2010
- there are pilot schemes

Other

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi96tMoLdYM9mr1UIWrY/edit

LS4VET: Country fiche

21. What school types used LS in the beginning? Which school types joined later? Which school types are piloting?

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi96tMoLdYM9mr1UIWrY/edit

#### LS4VET: Country fiche

# 22. How important are the following goals for teachers to engage in LS in your country? \*

Mark only one oval per row.

	extremely important	very important	important	not important	I do not know
To improve their teaching and their pupils' learning quality (focus on the own classroom)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
To learn from other teachers in a professional community (focus on collaboration with other teachers)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
To research effective methods for teaching in particular topics (focus on content)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
To engage in research (focus on research)	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
To acquire qualification in a higher education programme from universities (focus on professional development and qualification)	$\bigcirc$	0	$\bigcirc$	$\bigcirc$	$\bigcirc$
Other + Please specify in the next question!	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

23. If you clicked "other" in the last question, please tell us more!

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

#### LS4VET: Country fiche

# 24. How actively involved are 6-12 year-old pupils in LS in your country? \*

Mark only one oval per row.

	very	sometimes	hardly	not at all	I do not know
Planning LS	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
As learners	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Giving feedback about learning during research lessons	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Giving feedback about learning after the research lesson	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Participating in reflection/debriefing meetings	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Participating in the variation of the research lesson	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi96tMoLdYM9mr1UIWrY/edit

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9.12.2020

#### LS4VET: Country fiche

#### 25. How actively involved are 13-19 year-old pupils in LS in your country? \*

Mark only one oval per row.

very	sometimes	hardly	not at all	I do not know
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
	0			very sometimes hardly all all

#### 26. What are the sources of financing LS in your country? \*

Check all that apply.

- No funding: teachers engage in LS on their own account
- School funded: LS is part of the teaching obligation
- University funded: mentors and/or <KnowledgeableOthers>/LD facilitators are funded by the university
- State funded: there are official programmes that provide funding for LS
- Other: If possible, please specify in the next question!
- 27. What is the approximate budget available for LS? Which other sources for funding are there?

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

9.12.2020	LS4VET: Country fiche
28.	What institutional benefits/incentives/obligations are there for teachers to engage in LS? $^{\star}$
	Check all that apply.
	<ul> <li>LS is part of the institutionalised in-service programme</li> <li>Teachers earn ECTS points for professional development</li> <li>Teachers can improve their status/seniority through engaging in LS</li> <li>Other: Please specify in the next question!</li> </ul>
29.	If you clicked "other" in the last question, please tell us more!
30.	What is the typical role of school principals or other school leaders (e.g. subject department head) in LS in your country?
Se 31.	ction 3: <lessonstudy> (LS) in VET education My information about LS in VET education is Mark only one oval.</lessonstudy>
	<ul> <li>comprehensive and most probably complete</li> <li>good but not complete</li> <li>nearly complete</li> <li>limited and most probably incomplete</li> <li>Other + Please specify in the next question!</li> </ul>

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

9.12.2020	LS4VET: Country fiche
32.	If you clicked "other" in the last question, please tell us more!
33.	Which components does LS in VET education typically encompass in your country?
34.	For how long do VET LS teams usually plan research lessons in your country?
35.	How many cycles does LS in VET education typically encompass in your country?
36.	Since when has LS been carried out in VET education in your country?
37.	Which goals do VET teachers pursue in LS in your country?

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

	LS4VET: Country fiche
38.	What institutional benefits/incentives/obligations are there for VET teachers to engage in LS?
39.	How are LS teams in VET typically composed in your country?
	2
40.	What are the goals of VET teachers to engage in LS?
41.	How is a LS model used for LS in VET? (experiences with models, does it work? what are challenges?)
	5 5

9.12.2020	LS4VET: Country fiche
42.	How often do VET teachers participate in LS per year?
	Mark only one oval.
	once
	up to 3 times
	4 or more times
	Other: Please specify in the next question!
43.	What kinds of research questions/themes are central to LS in VET?
44.	What teams implement LS in VET schools in your country?
	Check all that apply.
	mixed
	<ul> <li>involving only one type of VET educator</li> <li>Other: Please specify!</li> </ul>
45	
45.	Are these studies connected in any way? If yes, how?

https://docs.google.com/forms/d/1gvsUZsp-5KYwf8Wi0mo\_Aq7Yi98tMoLdYM9mr1UIWrY/edit

9.12.2020	LS4VET: Country fiche
46.	What types of lessons are being researched in LS in VET? (duration lesson, location of lesson etc)
47.	What developments are in process to implement LS in vocational colleges/high schools in your country?
48.	What other information is essential to understand the specificity of LS in VET in your country?

# Final report

9.12.2020

LS4VET: Country fiche

Thanks for answering this questionnaire!



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